

gens Vahl., out of which were peeping the bright yellow flowers of *Mimulus pilosus* Watson. Here and there along the banks I gathered *Nicotiana attenuata* Torr., *Nicotiana trigonophylla* Dunal., *Mimulus luteus* L., *Polygonum incarnatum* Ell., *Coreopsis cardaminaefolia* Torr. & Gray, *Asclepiodora decumbens* Gray, *Erythræa venusta* Gray, *Ambrosia psilostachya* DC., *Oxalis violacea* L., *Thalictrum Fendleri* Engelm., *Solidago Missouriensis* Nutt., *Solidago Canadensis* L., *Krameria parvifolia* Benth., *Aster ericæfolius* Rothr., *Viola Canadensis* L., var. *scopulorum*, *Oenothera albicaulis* Nutt., *Polygala hemipterocarpa* Gray, *Petalostemon multiflorus* Nutt., *Boerhaavia spicata* Choisy, *Solanum nigrum* L., *Erigeron divergens* Torr. & Gray, *Helianthus petiolaris* Nutt., *Riddellia Cooperi* Gray, *Nama hispidum* Gray, and *Maurandia Wizlizeni* Engelm.

Further up the cañon the stream is shut in by almost perpendicular walls of rock. In many places where the water slowly seeps through small fissures in these rocky walls, *Mimulus cardinalis* Dougl., one of the most beautiful of wild flowers, was growing in abundance. Here also were found *Mirabilis multiflora* Desf., and *Heuchera parvifolia* Nutt. In many places large areas of *Pteris aquilina* L. spread their broad fronds in the shade of the protecting rocks.

On my return to the station, my plant-can contained more than seventy-five species in fit condition for herbarium specimens.—J. W. TOUMEY, *Tuscon, Arizona.*

EDITORIAL.

BOTANICAL AUTHORITY seems to be following the same lines of evolution as political. It began with a system of tyranny or dictatorship that vested all such authority in a single individual. Linnæus seems to have ruled the botanical world with a rod of iron, and his word was law. There next followed the reign of a botanical aristocracy, whose spirit was not merely to snub but even to suppress the work of the less favored. Naturally, the spirit of freedom and independence gradually increased, and numerous became the revolts against self-constituted authority.

OUR OWN country has passed through the period of a botanical aristocracy, and there is a good deal of written and unwritten history concerning rank injustice done to both worthy but unknown botanists and known but underrated botanists. A new generation, however, has come to the front; one in which the spirit of democracy is prevalent,

one that proposes to fight not only its own battles but also those of all ancient neglected worthies.

THE THING TO OBSERVE is that we are slipping rapidly away from the time when a few persons or a few places represented the concentration of botanical authority, and are upon the threshold of a new order of things in which the voice of authority is to come from "the people." There may not be greater rivalry in feeling, but there will be far more successful rivalry; and the botanical landscape will represent a uniform forest rather than a cluster of sequoias towering in the midst of their lowly neighbors. Everything wrought out will have to run the gauntlet of the many instead of the few.

THIS CONDITION of things has been brought about by the wonderful spread of scientific training and the consequent development of independent thinking. In a general sense this is a far more desirable state of affairs, for it develops hundreds of efficient workers where there was only one before. It also has certain disadvantages common to all democracy. While it brings individual freedom it permits follies which a strong central power would have repressed. The new order of things, therefore, must be expected to be more of a "lo here" and "lo there" state of affairs, full of "fads" and erratic movements, and abounding more in worthless than worthy literature, but there is in it more of hope and promise for the rapid development of botanical science than under the former régime, for an aristocracy is always inclined to be ultra-conservative. It is only rebels who are apt to be extremists, and when there is nothing left to rebel against they usually settle down into staid and comfortable citizens.

OPEN LETTERS.

The pollination of *Orchis spectabilis*.

In the spring of 1891 while examining *Orchis spectabilis*, I was surprised to see the pollen masses, which I had withdrawn on the point of my pencil, turning backward, instead of downward, as one would expect from the position of the stigma below the anthers. When I pushed the pencil point into another flower the pollen masses were quite out of position to fertilize the pistil. Yet this flower is said to set seed abundantly. Can any of the readers of the GAZETTE throw light upon the matter?—JANE H. NEWELL, *Cambridge, Mass.*